

# Comparisons of Job Characteristics

**Focus Occupation:** Health and Safety Engineers, Except Mining Safety Engineers and Inspectors (17-2111)

**Associated Occupation:** Industrial Engineers (17-2112)

Compare Knowledge

Compare Skills

Compare Abilities

Compare Detailed Work Activities

Compare Tools and Technologies

<<	Focus occupation element is much lower
<	Focus occupation element is lower
0	Focus occupation element is at a similar level
>	Focus occupation element is at a higher level
>>	Focus occupation element is at a much higher level

## Knowledge

Similarity of Focus Occupation to Associated Occupation: 77

Focus Occupation: Health and Safety Engineers, Except Mining Safety Engineers and Inspectors (17-2111)  
Associated Occupation: Industrial Engineers (17-2112)

Associated Occupation's Key Knowledge Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation
Engineering and Technology	5.7	18.0	18.9	0 Current knowledge level may be sufficient
Production and Processing	6.0	17.4	8.6	<< Extensive education and/or training may be required
Mathematics	9.2	15.6	15.1	0 Current knowledge level may be sufficient
Mechanical	6.8	15.6	12.8	< Expanded education and/or training may be required
Design	5.2	14.8	15.9	0 Current knowledge level may be sufficient

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O\*NET (Occupation Information Network) data.

## Skills

Similarity of Focus Occupation to Associated Occupation: 77

Focus Occupation: Health and Safety Engineers, Except Mining Safety Engineers and Inspectors (17-2111)  
Associated Occupation: Industrial Engineers (17-2112)

Associated Occupation's Key Skills Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation
Reading Comprehension	10.7	14.8	14.8	0 Current skill level may be sufficient
Complex Problem Solving	9.1	12.8	11.8	0 Current skill level may be sufficient
Writing	9.2	12.8	12.9	0 Current skill level may be sufficient
Monitoring	9.9	12.2	10.8	< A higher skill level may be required
Mathematics	6.2	10.3	8.6	< A higher skill level may be required
Systems Analysis	6.5	9.9	10.6	0 Current skill level may be sufficient
Systems Evaluation	6.4	9.5	10.5	> Skill level is likely sufficient
Management of Material Resources	3.7	7.2	4.0	<< Extensive development of skills in this area may be required

Management of Financial Resources	3.3	6.0	4.0	<<	Extensive development of skills in this area may be required
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The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O\*NET (Occupation Information Network) data.

Abilities		Similarity of Focus Occupation to Associated Occupation: 95				
Focus Occupation: Health and Safety Engineers, Except Mining Safety Engineers and Inspectors (17-2111)						
Associated Occupation: Industrial Engineers (17-2112)						
Associated Occupation's Key Abilities Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation		
Written Comprehension	11.0	14.6	14.1	0	Current ability level may be sufficient	
Written Expression	9.8	14.1	13.4	0	Current ability level may be sufficient	
Problem Sensitivity	11.1	13.6	15.3	>	Current ability level is likely sufficient	
Inductive Reasoning	10.2	12.8	14.3	>	Current ability level is likely sufficient	
Information Ordering	9.9	11.8	11.9	0	Current ability level may be sufficient	
Selective Attention	8.7	10.7	9.4	<	Some improvement in abilities may be required	
Mathematical Reasoning	6.3	10.5	8.7	<	Some improvement in abilities may be required	
Visualization	7.5	10.3	10.2	0	Current ability level may be sufficient	
Time Sharing	6.6	8.5	6.0	<<	Extensive improvement in abilities may be required	

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O\*NET (Occupation Information Network) data.

Activities that Both Occupations Have in Common		Similarity of Focus Occupation to Associated Occupation: 86
Focus Occupation: Health and Safety Engineers, Except Mining Safety Engineers and Inspectors (17-2111) Associated Occupation: Industrial Engineers (17-2112)		
Work Activities	Exclusivity of Activity	
Advise clients regarding engineering problems	67	
Analyze effectiveness of safety systems or procedures	87	
Analyze engineering design problems	69	
Analyze technical data, designs, or preliminary specifications	47	
Communicate technical information	4	
Develop safety regulations	74	
Evaluate engineering data	60	
Evaluate manufacturing or processing systems	68	
Examine engineering documents for completeness or accuracy	62	
Explain complex mathematical information	30	
Improve test devices or techniques in manufacturing, industrial or engineering setting	75	
Inspect facilities or equipment for regulatory compliance	51	

Perform safety inspections in industrial, manufacturing or repair setting	32
Plan testing of engineering methods	72
Prepare safety reports	60
Prepare technical reports or related documentation	22
Read blueprints	10
Read technical drawings	7
Record test results, test procedures, or inspection data	48
Resolve engineering or science problems	46
Understand engineering data or reports	48
Use drafting or mechanical drawing techniques	50
Use hazardous materials information	35
Use mathematical or statistical methods to identify or analyze problems	30
Use scientific research methodology	21
Use technical information in manufacturing or industrial activities	67
Use technical regulations for engineering problems	61

Not all positions in these occupations will necessarily perform all of the listed activities. The exclusivity rating is an indication of how unique the activity is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations engage in that activity.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O\*NET (Occupation Information Network) data.

## Tools and Technologies that Both Occupations Have in Common

Similarity of Focus  
Occupation to Associated  
Occupation: 73

**Focus Occupation: Health and Safety Engineers, Except Mining Safety Engineers and Inspectors (17-2111)**  
**Associated Occupation: Industrial Engineers (17-2112)**

Tools and Technologies	Exclusivity
Acute care monitoring units and related products	22
Business function specific software	1
Cameras	2
Computers	1
Content authoring and editing software	1
Development software	4
Electrical measuring and testing equipment	7
Indicating and recording instruments	2
Industry specific software	1
Laboratory ovens and accessories	15
Length and thickness and distance measuring instruments	2
Light and wave generating and measuring equipment	4
Metals and metallurgy and structural materials testing instruments	15
Pressure measuring and control instruments	10
Sound generating and measuring equipment	19
Temperature and heat measuring instruments	6
Transducers	23

Not all positions in these occupations will necessarily use all of the listed tools and technologies. The exclusivity rating is an indication of how unique the tool or technology is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations use that tool or technology.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O\*NET (Occupation Information Network) data.